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PRESIDENTIAL ADDRESS

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From the time when the Rhode Island Medical Society was incorporated and its first officers installed in 1812, it has been mandatory that its President deliver an annual address. This procedure has continued down over a period of one hundred and thirty years and, as a consequence, in our files there is a collection of addresses by its former Presidents which in general, at least, ranks favorably with the efforts of other states' Presidents. This collection contains papers on purely scientific subjects, social problems, discussions on policies of the times, et cetera. These addresses have reflected the states of mind of the membership of the Society through a long period of years and they give a clear insight into the problems confronting the medical profession during those years. *This* address will be neither a scientific nor a literary effort. On the contrary, it will be somewhat of an exhortation on the part of the present incumbent of the President's office to the Rhode Island medical profession to fulfill its obligations to its country in its present hour of need. It may justifiably be said, and then again not justifiable, that it is easy for one, who because of age or physical disability can well afford to tell others what to do and urge them on. Unfortunately, we cannot halt the course of time nor can we avoid the accidents of life, nor can it be denied that those of us who qualify for the home brigade would gladly surrender our vantage point of safety for that possession of glorious youth that once again, as years ago, we might be able to offer our services to our country. For what I have to say I bespeak your indulgence and understanding. The best one can do is to do the best one can. No task is too menial, no sacrifice too great, when our country calls. We who cannot go will give our best at home.

In the course of the existence of this Society there have been six wars including the present one, some of which as we look back may not appear as very great in their magnitude. But no matter how great or how minor at the present time they may seem, they were pregnant with possibilities for the future. The results of the war of 1812, the Mexican war, the Civil war, the Spanish war, and the First World war, were not all that we might have desired in the light of the future, but at the moment they did seem at least partially to solve immediate problems. The three great outstanding achievements of the wars of this country, including the Revolutionary war, was the gaining of independence, the preservation of the Union and the abolishment of slavery. Those achievements put the crowning cap on Thomas Jefferson's immortal "All men are created equal and are endowed by their Creator with certain inalienable rights, that among these are life, liberty and the pursuit of happiness;" Daniel Webster's "Liberty and union, now and forever, one and inseparable;" and Lincoln's deathless declaration "That we here highly resolve that these dead shall not have died in vain—that this nation, under God, shall have a new birth of freedom and that government of the people, by the people, for the people, shall not perish from the earth."

Time has clarified the issues involved in the Revolutionary and Civil wars. Time has somewhat clarified the issues involved in the Mexican and in the Spanish wars,—the banishment from our doorstep of despotic and arrogant powers holding a people in intolerable subjection. In the last war, the First World war, American aims were idealistic. We sincerely believed, I think, we were going to save the world for Democracy. We sacrificed thousands of human lives, crippled hundreds of thousands of bodies, physically and mentally, poured out millions of dollars in the hope this world would be a better place in which to live. Those of us who clearly remember that war, remember the enthusiasm and the determination with which we eventually entered it, feeling that we were contributing something that would make future wars impossible and that we ourselves and our children could look forward to freedom from aggression and mortal combat. Unhappily for us, the wisdom of our statesmen at the time was not sufficient for them to lay the foundations of a lasting peace, or to devise a structure which could resist the pressure of human greed, misunderstandings and human ambitions. And so

today, we are reaping the harvest from seeds planted by short sighted, selfish, blundering men who at the time happened to have held the reins of power.

Another crisis has occurred in the life of our country and how this country will ride it out will depend on the effort made by every man and woman within its borders. This war is different—will be different—from other wars which have gone before. It is and will be a war which demands and will demand in the words of Mr. Churchill "blood, sweat and tears." It is an all out war which will demand a total contribution in material, effort and sacrifice before success is achieved. It will demand the lives of thousands and the utmost effort of all. And our effort and our sacrifice will be in proportion to our valuation of our political philosophy and our standards of living. The freedom and the privileges we enjoy today and which we claim as our natural right have been secured and handed down to us by our forefathers through "blood, sweat and tears."

Knowing nothing of the locomotive, of the automobile, of the airplane, nothing of the telegraph, of the telephone and radio, they trudged miles on foot or by horseback to school, to church and social gatherings, read a weekly paper or none at all, and lived and developed because of that spiritual quality which gave them faith in themselves and faith in the future of their country. Our forebears lived, fought and died for ideals in the support of which they possessed nothing but primitive methods and primitive knowledge. They knew nothing about the electrocardiograph, nothing about the Wasserman test, nothing about x-ray, radium, inoculations for typhoid fever, the causation of yellow fever, malaria, or a million other things about which we set so much store today. But they did have the courage to go out to meet nature in a death struggle; they did have the courage to know what they wanted and to fight for what was a free man's heritage. And as a result, we today have inherited the most noble and humane civilization the world has ever known. Are we going to give that up without a struggle? Are we going to let the old people down because for the time being it may mean a lowering of our standard of living?

Our standard of living! What will that mean for ourselves, our wives and our children if we lose this war? Is there anyone here today who would not lower his standard of living, who would not forego his profits, who would not sacrifice his comforts to be able to think independently, to express his opinion honestly, and to avoid the Gestapo and the firing squad?

We must cease to think in selfish terms; we must cease to look to someone else to do the things we should do ourselves. A reluctance to play our part will only prolong the struggle and may result in the loss of it. It is a terrible thing that in wars the flower of the manhood of any country should be the first to go and to fall. It is tragic that young men on the threshold of life should be asked and required to make this sacrifice. But that is war and such it will be until humanity makes it different.

Our politicians have been largely responsible for our present situation. It is largely because of their efforts, because of their influence, that we found ourselves in such a deplorable condition when we were brought face to face with the present crisis. Little things have gone far to reduce the faith and confidence of the common people in our legislators. The voting of pensions to themselves, the demand for X rationing cards, the playing of politics as usual has not increased our respect. I thoroughly believe the common people of this country are so much more sound of core, so much more aware of the country's needs, so much more willing to give and do that this is going to be a people's war. The common people today are setting the pace; the common people in the end are going to tell the whole world what it is all about. Any effort that will reach down into the souls of the multitude, such as the effort of this war will do, is going to result in a demand of the right to a part in the solution of the problems to be faced by our country.

As I have said previously, this war demands an all out effort. As a part of this all out effort what will be the role of the medical profession and how will it fulfill that role? Well, the role will be the same old role that the Profession has played since its very beginning. It will be the role of caring for the sick, the wounded, the mentally ill of our civilian population and of our military forces. We must maintain the care of the millions of workers at home who are turning out the munitions of war to make our fighting forces victorious. We must keep them as fit and as able as possible.

In our enthusiasm to put on a uniform we must remember that heroes are not found only in the front lines. Some acclaim must accrue to those obliged to stay at home; to those too old to serve; to those physically unfit; to those few who may

truthfully be called essential men. They eventually will be forced to carry a burden such as was never dreamed of that others may give their services, yes, their lives, to the fighting forces.

Bearing all of that in mind, though, the fact still remains that the medical profession must care for the fighting forces of this country. I am convinced that this will be done voluntarily and willingly. But whether voluntarily or involuntarily, willingly or unwillingly, it has got to be done and will be done. As long as we meet the requirements we can keep the situation in hand, but if we fail we shall lose our dignity and our preferred standing.

History has largely been recorded from the achievements of military heroes and the accomplishments of those in political fields. Human advancement owes much to their successes. But it has been at the cost of untold numbers of human lives, of untold misery and sacrifice. As bad as modern war is in the conception of the common person, few realize how much greater its horrors might be if it were not for the medical profession.

Until the last comparatively few years disease and pestilence claimed more victims both in the armed forces and the civilian population than machines of warfare. As a cause of death in every war until this century disease in its various forms has outstripped death from armed conflict. The medical profession has made war safe for untold millions. Those who escape the danger of bombs, bullets, cannister and the bayonet, no longer fear the ravages of typhoid, typhus, yellow fever, malaria, and such. And those who are wounded, maimed, blasted, no longer fear hospital gangrene, tetanus and the crippling that comes from improperly treated fractures. And why? Because the medical profession has been largely able to conquer those and other conditions. Glory and acclaim comes to a Sergeant York, and let's not take any of it away from him, but why was not a Congressional Medal of honor given to a Zinsser? Can there be any comparison as to which has been the greater benefactor to our country and to humanity as a whole? The stretcher bearers, the comforters of the suffering, the salvagers of the maimed and broken, the conquerors of disease, have largely gone unrecognized and their praises have been unsung while honors and acclaim have been accorded others for some outstanding feat of arms.

Let's not belittle those martial heroes; they have become national and world figures, but let us bring into a proper perspective those of the medical profession who in their unselfish, unostentatious and unheralded way have contributed so much to the safety of human life today. As we contemplate the martial successes of an Alexander the Great, of a Caesar, of a Napoleon, of a Washington, of a Lee or Grant, of a Pershing or Foch, or I might even say of a MacArthur, and while we try to evaluate the importance of their successes, why not think of an Hippocrates, a Baron Larrey, a Hunter, a Pirogoff, a Jenner, a Keen, a Pasteur, a Gorgas, a Walter Reed and his confreres, a Zinsser and innumerable others, and weigh against them the contributions of those men? Those men and others have blotted out typhoid, typhus and yellow fever. They have eliminated small pox, malaria, diphtheria, to mention only a few diseases. They have gone a long way towards conquering wound infections, towards the banishment of amputations and towards the rehabilitation of the crippled. While war in its destructive course has gone on unmindful of the awful waste of human life and suffering, the doctor has followed in its wake to bring relief to suffering, restoration to usefulness and the banishment of disease.

So I ask again, in this present catastrophe, what can and what will the medical profession do. As regards what it will do there is no question but that it will continue its glorious tradition. I know eventually it will give of itself as it has never given before. It will give its best in the flower of its manhood; it will give of its highest ability; it will make an unselfish sacrifice of itself to carry to the men who shoulder the guns, who fly the planes, who man the ships on and under the seas, the highest service it can render. And afterwards, it will endeavor to bring back to usefulness the broken wrecks, physical and mental, which war has left in its wake. And will there be a thought of gain or glory? I think not! It will be a contribution of loyalty, an effort because of sympathy with human suffering, and if one because of it achieves distinction it will be because of what he has contributed.

In the present crisis if there has been a seeming slowness on the part of the medical profession to offer its services, I cannot believe that it is entirely because of a lack of patriotism on its part. I think the Government itself must assume its share of the blame. It has at times shown an indecisiveness and

a lack of clarity. I think the younger men have been a bit bewildered and a bit uncertain as to what is required of them and what they should do. When the way is clear, I am sure that every doctor will do his duty.

On the other hand, I believe, the Government has been and still is trying to play fair with us. Maybe there are some amongst us who think they could have done a better job. Well, it is the prerogative of every American citizen to consider himself a super strategist. We all have our pet peeves and we spend a large part of our day trying to satisfy those peeves. Maybe we could do better on the job than the Government, maybe we couldn't. The fact remains that we have a tremendous job to do and the way to do it is not by destructive criticism but by wholehearted collaboration and doing the best we can in whatever situation we may find ourselves.

What can the Rhode Island Medical Society do in the way of service to its members-in-arms? Frankly, in the way of an organized effort to bring concrete aid and assistance it may not be able to accomplish much. A committee was appointed by the President to study the situation and make recommendations. It has not made much progress because it did not seem possible to commit its members to any hard and fast course of action. The remittance of a certain percentage of fees from the care of patients of those in service must be dependent on one's sense of honesty and obligation and will be a variable quotient. The insistence of the return of patients to their former doctors cannot be enforced. This was tried out in the last war and failed. It can be encouraged but the honest carrying out of such policies must depend on any individual doctor's sense of obligation. Medical clientele in a city such as Providence is so fluid that it is difficult, yes, impossible, to determine to what doctors patients belong. In normal times it is hard enough to settle the question. In a time of such uncertainty from past experiences it would seem to be futile.

We can work to see that a man's hospital appointments will be reserved for him; we can guarantee that his Society dues during the period of his services will be remitted. We can guarantee that a doctor's family will receive adequate medical attention. We can see that it is properly hospitalized. We can see that the members will receive the current literature, publications, notices, etc., of the Society. We can keep them in touch with what is going on at home. We can welcome any requests for advice, help and suggestions from any of our members, and will gladly try to aid them in the solution of any of their personal problems. Our Secretary invites and will gladly receive any communications and the writer may be assured of careful, sincere and thoughtful consideration of problems advanced. It is possible that with experience and opportunity we may be able to evolve a system by which we can be of more positive service.

As a profession we have a grand opportunity of making good. It is up to us to see that we do it. As long as we can satisfactorily handle our own affairs and give the Government what it wants we will be allowed to do it. But when we fail in that we will be ordered what to do and not by our own kind. The Government isn't interested in how much insurance we carry and how we are going to pay the premiums; it isn't interested in our mortgages and how we are going to pay the interest; it isn't interested in our leases; nay, it isn't going to be interested in general in our dependencies. It is going to say before long unless its requirements are met voluntarily, "We need you, we are going to have you; Come!" What will happen to our insurance, what will happen to our mortgages, what will happen to our property in general will depend on how well we can protect those things by making our country enduring.

We men of England, we men of Scotland, we men of Ireland, France, Italy, Germany, the Scandinavian countries, in fact, we men from countries the world over, whose fathers and mothers, grandfathers and grandmothers came to this wonderful land of freedom and opportunity to escape persecutions at home, owe something to this country. For this *is* our country. In the militaristic countries of the world freedom as we know it is unknown. Can you picture in the countries of Europe groups of doctors sitting in staff rooms of hospitals and criticizing openly their Government as we do here? What countries can do that today but the countries under the principles of Anglo-Saxon government? We demand the right to express ourselves as individuals, we demand the right to say yes or no to this or that problem. Who is going to guarantee us that right if we are not willing to protect it? We who were born or acquired citizenship under the Stars and Stripes, we who sought protection under

that flag from persecution, owe it to this country to see that that flag is kept flying. It may be that from our sense of security we take things for granted. It may be that we see no immediate need for action on our part. But we forget past history. We forget what has gone on before our present time. We forget what Washington and our continental troops endured at Valley Forge. We forget the humiliation we endured when Washington was captured and burned in the War of 1812. We forget the enormous sacrifices made in the Civil War and the glorified outcome—abolition of slavery and preservation of the Union.

We forget the sacrifices in men and material in the last World war for an ideal which wasn't realized. We forget all the blood, anguish, all the pain and suffering that generations in this country have experienced to place us where we are. Why cannot we today feel that we have something worth fighting for, that our way of life is something we will not give up, that America is still the land of the free and the home of the brave and will remain so! All this cannot be accomplished without sacrifice and effort. It cannot be accomplished with one eye on our life insurance premiums, another eye on our mortgages; one eye on our practice and the other eye on our easy way of life.

A number of our members are already in the service; many more of us will be in service before the year is out. Some of our members have sons doing duty at home and abroad. All of you will want to see that your friends, your friends' sons, will receive the same care and attention that you would wish to give them in sickness and pain were they to fall into your own hands at home. Those boys are in the position of making the supreme sacrifice. Can we do less than to try to make that sacrifice easier? Can we as medical men who have stood for sacrifice and unselfish service from time immemorial forget our past traditions and play our own selfish game? This life we know is an heritage. It has been created, built up and protected by past sacrifices. We are asked now to give no more than our forefathers gave to put us where we are. If we love our way of life, if we love our children, should we not do as much? Let us forget our differences of opinion, let us forget our selfish thought of gain, let us forget our immediate interests, and all turn to help protect and perpetuate the most glorious way of life the world has ever known.

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ARTHRITIS

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For practical purposes when we speak of arthritis we are referring to some disease or abnormality of one or more joints. In considering a patient suspected of having this condition it is imperative that we first proceed with a complete history and physical examination, supplemented by selected laboratory procedures, including X-rays when indicated. In this way we may usually expect to establish two important facts. FIRST, that the patient is actually suffering from arthritis and not from some unrelated condition; and SECOND, which of the several types of arthritis is present in the case under consideration. It is not so very uncommon to see such conditions as metastatic cancer to bone, or angina with referred shoulder pain, masquerading as arthritis and, unfortunately, being treated as such. Moreover, it should be realized that the term arthritis includes many different, often unrelated, joint conditions, and we must always attempt to identify the type of arthritis present in a given case, if we are going to prescribe intelligent treatment.

In the time at our disposal I shall attempt to briefly discuss only three common types, namely rheumatoid arthritis, degenerative arthritis, and gout. A few comments, chiefly with reference to rheumatoid arthritis, will be included on the basis of experience derived from the Arthritic Follow-Up Clinic at the R. I. Hospital and from patients seen in private practice. The Follow-Up Clinic has operated since 1936 with the main purpose of observing the subsequent course of patients with arthritis who were admitted to and adequately studied on the hospital wards. In this Clinic Drs. Robert Murphy and Ernest Thompson provided very considerable assistance.

Rheumatoid arthritis, also known as atrophic, proliferative or chronic infectious arthritis, is the most important type. This is the kind that may lead to serious joint destruction and crippling. 165 cases of this disease have been studied in the Clinic and in private practice.

Rheumatoid arthritis is typically a disease of early adult life, although it may occur at any age. It is a generalized disease and weight loss, excessive

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fatigue, anemia and fever are frequently present. Women are more often afflicted than men. Its cause is unknown but, in susceptible individuals, it seems to be precipitated by overwork, exposure to cold and dampness, and by infections. The involved joints are usually swollen, tender and warm. In a typical case, the joints are symmetrically involved on the two sides of the body. Most commonly affected are the joints in the middle of the fingers and the wrist joints. Muscle atrophy about the joints is often pronounced. The sedimentation rate is almost always increased over normal. After the disease has been present for several months, x-rays often show narrowing of the joint spaces and some destruction of the joint surfaces.

In the present state of our knowledge the treatment of this disease embodies two main principles: First to restore the patient's general health to the best possible status; and second, to prevent by all the measures at our disposal stiffness and deformity of the involved joints.

At an early visit the patient should be informed that the treatment may, of necessity, be long, and that the results depend in large measure on his own cooperation and perseverance. Written instructions are valuable in preventing misunderstandings and in constantly reminding the patient of his part in the task. Let us now consider some of the more important factors in treatment.

REST. The amount needed will vary according to the severity of the disease. At times complete bed rest for weeks or months may be required, while in milder cases 9-10 hours sleep at night with a daily nap will suffice. Rest should be sufficient to prevent the patient from experiencing at any time a sense of fatigue or exhaustion. In the importance of this factor the treatment of rheumatoid arthritis is quite comparable to the treatment of tuberculosis.

DIET. This should be well balanced and should contain meat, milk, fresh fruit and vegetables daily. The number of calories should be adjusted to the needs of the patient for gaining or losing weight. Ordinarily in this disease the patients are under nourished. The various vitamins may be added in moderate amounts to insure optimum nutrition. Plain cod liver oil, which can usually be tolerated in doses of 2-3 ounces a day, is often of assistance in inducing a gain in weight.

DRUGS. In general these are of distinctly secondary importance. Salicylates in some form are helpful in relieving pain. Numerous patients take 8-12 five grain aspirin tablets daily for long periods with no deleterious effects. Iron is useful for existing anemia and various sedatives to promote needed rest. Cincophen is dangerous and should not be used in this disease. Even in our limited experience we have seen two cases of severe liver damage resulting from its administration.

CARE OF THE JOINTS. Only the barest outline of this aspect of treatment can be presented here. It is in this phase of therapy that the orthopedist is of greatest assistance. During the period of most acute joint inflammation various types of splints and casts provide relief from pain and spasm and help to prevent deformity. However, in order to prevent restricting adhesions, the fullest possible joint motion at the earliest possible period in the disease is necessary. As soon as at all feasible, full joint motion should be carried out at least once daily. As the acute inflammation begins to subside, local heat in some form is frequently of value. Massage and graded exercises to combat muscle atrophy are of great assistance if cautiously and sensibly applied. The arthritic patient who lies immobile in bed with pillows under his knees and with his hands flexed across his abdomen may be temporarily comfortable, but he runs a very serious risk of being permanently crippled.

What may be said about other methods of treatment? Their very number would suggest that none of them has any recognizable merit. First, a word about foci of infection. Much in the recent literature and our own experience support the opinion that removal of foci of infection very rarely has any beneficial influence on the course of rheumatoid arthritis. Certainly caution and conservatism are indicated in dealing with them. In this connection it might be recalled that Dr. Henry Christian once wrote that he was sorely tempted to present a paper entitled "the damnable practice of pulling teeth."

Various vaccines, sulfur preparations, bee venom, vitamin D concentrates, to mention a few of the more widely advocated preparations, have very little to support them. In addition in each case there is reliable data gathered by experienced observers to indicate that they are without recognizable value. Gold preparations have been recently used rather widely. Expert opinion is divided on their merits and it is too early to pass judgment.

Certainly their use is attended with real danger and even the best results are far from spectacular. In short, in the present state of our knowledge there is no royal road to recovery from rheumatoid arthritis without prolonged effort by physician and patient.

What may be said of the results of treatment? In general, most of the reliable reports in the literature would indicate that about ¼ of the patients with this disease show no definite improvement, about ½ improve slightly or moderately, and about ¼ show marked improvement, approaching a cure. I have attempted roughly to analyze the cases in the Clinic and my practice that have been followed for at least a year. (Table No. 1). I have been particularly interested in trying to discover some of the factors that might be responsible for the poor results observed in some cases. Three points are worth mention. First, the severity of the disease and its duration before adequate therapy was undertaken are of importance. Some patients with severe disease seen early in its course did remarkably well. However those with severe disease in whom much deformity had been allowed to develop were much less likely to improve. Second, financial and emotional problems often seemed to provide harmful influences. Some patients felt obliged to attempt to continue at work even though they knew it was to their disadvantage. In the State of Rhode Island there are no facilities for the prolonged adequate care and treatment of poorer patients suffering from rheumatoid arthritis. This is a problem that deserves the attention of physicians, social workers and Public Health officials. Thirdly, some patients were unwilling to contribute efforts of their own and would not endure necessary discomfort and pain. They were the so-called "whiners" and perpetually sought the easy painless cure.

TABLE No. 1

CASES OF RHEUMATOID ARTHRITIS FOLLOWED FROM ONE TO SIX YEARS

Improvement	*Clinic*		*Private*	
0 (or worse)	12	—47%	10	—41%
25%	9		4	
50%	11	—53%	7	—59%
75%	11		5	
100%	1		8	
TOTALS	44		34	

In attempting to estimate the degree of improvement, each patient's condition at the latest follow-up was compared with his status when first seen. The following factors were compared: Joint pain and stiffness; signs of joint inflammation; general health and ease of fatigue; muscle atrophy; ability to work. A few of those with 0 or 25% improvement and almost all with 50-100% improvement were able to return to work and resume most of their previous activities. It should be realized that the number of cases is too small for statistical value and the follow-up period too short in many instances to evaluate final results. However, we believe this table supports the contention that significant improvement can be obtained in the majority of patients with rheumatoid arthritis.

The second type of joint disease to be discussed is degenerative arthritis. Synonyms are hypertrophic arthritis and osteo-arthritis. I have records on 44 patients in this group, mostly seen in private practice as they are not often sufficiently disabled to merit hospitalization.

The cause of this type of joint disease appears to be the degenerative changes resulting from prolonged use or abuse of hereditarily weak joint cartilage. It usually occurs in patients beyond the age of 40. Its victims are otherwise in excellent health, though often overweight, and signs of joint inflammation are minimal or absent. The weight bearing joints, particularly the knees, are frequently involved and the patients complain of stiffness and pain on going over stairs or getting out of chairs. Typical of degenerative arthritis are the so-called Heberden's nodes which are nodular swellings involving the joints of the fingers nearest the nails. The sedimentation rate is usually normal. X-rays often reveal bony spurs or lipping involving the joint margins. Bone atrophy is absent.

Unless the hips are extensively involved, serious disability almost never results. Therefore, in the absence of hip involvement, it is the first duty of the physician to reassure the patient that he will not be crippled by his disease. One of the major principles of treatment is to lessen the burden on the involved joints. In the case of knees, this means weight reduction for the obese, moderation in the use of the joint, and the improvement of weight bearing lines by such procedures as orthopedic attention to the feet. Locally applied heat and massage to nearby muscles often provides much relief. The temporary use of some form of support such as properly applied elastic bandages is also of assistance. Heberden's nodes need no treatment. If the hips are extensively damaged, reconstructive operations with vitallium cups may be considered. In numerous instances the

results of this procedure are excellent. In Table No. 2 are summarized some of the contrasting features of rheumatoid and degenerative arthritis.

TABLE No. 2

RHEUMATOID ARTHRITIS — DEGENERATIVE ARTHRITIS

	Diagnosis	
Usual Age	20-50	Over 40
General Condition	Thin, anemic	Healthy
	Chronically ill	Often obese
Joints	Symmetrical involvement	Weight bearing
	Wrists & mid-phalangeal	Heberden's nodes
	Swollen & warm	Rarely swollen
Muscle Atrophy	Often present	None
Rheumatic Nodules	15-20%	No
Sedimentation Rate	Fast	Usually normal
X-Ray	Narrowing, osteoporosis	Lipping
	Joint destruction	No osteoporosis
	Treatment	
Rest, 10-24 hours a day		Reassurance
Well balanced diet		Weight reduction
Salicylates		Joint protection
Local care of joints		Heat & massage
Grades exercises		

The final type of arthritis to be considered in this discussion is gout. This is not a rare disease as in my limited experience at the hospital and in private practice there have been 26 cases. The cause of gout is unknown but it appears to be associated with some fault in uric acid metabolism. Over 90% of cases occur in males, more commonly after the age of 40. Most of the victims of gout have involvement of their great toe joints at some time during their career. Patients with this disease have at varying intervals attacks of acute joint inflammation, usually with severe pain. The characteristic feature of their history is that BETWEEN ATTACKS, especially in the early years of their disease, their joints are entirely free from symptoms. As the disease progresses tophi, or collections of sodium urate crystals, may appear. They are most common in the cartilage of the ear, in bursae, especially at the elbow, and in or near involved joints. The demonstration under the microscope of the typical needle shaped sodium urate crystals in material obtained from a tophus constitutes positive proof of the diagnosis of gout. In almost all cases the serum uric acid is elevated over 6 mg per 100 cc during an acute attack. However, it must be remembered that other conditions such as leukemia and uremia may be associated with an elevated uric acid level. X-rays may at times show asymmetrical punched out areas in the bone near the involved joint, but often are of no assistance in diagnosis.

Treatment of the acute attack includes the protection and elevation of the involved joint with the application of heat or cold, whichever provides the more relief. By far the most effective phase of treatment, however, is the use of colchicine. This may be given every hour in doses of 1/120th of a grain. It should be given until diarrhoea occurs and then stopped. This may take from 10-25 tablets. Striking relief from pain will occur within 48 hours and the acute attack is over. The effectiveness of this drug in the treatment of acute gout cannot be overemphasized.

In between attacks a low purine diet is usually advised although its efficacy is open to some question. This type of diet involves primarily the avoidance of glandular meats, such as liver and kidneys, and in addition, the avoidance of beans, coffee and chocolate. The use of alcohol is likely to precipitate fresh attacks.

In Table No. 3 is a very brief summary of the more important facts about gout.

TABLE No. 3

GOUT

Diagnosis
Chiefly in males
Acute attacks & complete remissions
Big toe joint
Tophi- urate crystals
Elevated serum uric acid
Treatment
Colchicine grains 1/120 every hour 10-25 tablets. Given until diarrhea occurs.
Low purine diet

In conclusion I should like to re-emphasize the fact that there are many different unrelated types of arthritis. Before we can possibly prescribe intelligent effective treatment, we must be as sure as possible that we know the type of arthritis existing in the patient we are trying to help.

124 Waterman Street

THE HISTORY OF THE MICROSCOPE AND EARLY MICROSCOPY

B. Earl Clarke, M.D.

There is no evidence that the human race had any knowledge of magnification by means of lenses until near the end of the 13th century. It is true that Seneca, writing about 63 A. D., says "Letters, however small and dim, are comparatively large and distinct when seen through a glass globe filled with water." It appears however that he attributed this to the nature of the water rather to the curvature of the surface. The first clear statements concerning lenses are found in the works of Roger Bason. This English monk lived and wrote at Oxford. He spent his life studying nature. He completed an encyclopedic work called "Opus Majus" which he sent to the pope in 1276. In this he said, "If one looks at letters or other minute things through the medium of a crystal or glass put over the letters, and if it is the smaller portion of a sphere of which the convexity is towards the eye, and the eye is in the air, he will see the letters much better and they will appear larger to him. Therefore, this instrument is useful to old men and to those having feeble sight. For they can see a letter, or anything small, in sufficient size". In other passages Bacon foretells both the microscope and the telescope but there is no evidence that he actually used anything but a simple magnifying lens. Thirty-two years later (1299) a manuscript written in Florence (author unknown) contains this sentence — "I am so affected by years that I cannot read or write without the glasses they call spectacles, lately found out for the benefit of old men when their eye sight gets weak". Rivalto says, in 1305, that the invention of spectacles dates back twenty years, which would be 1285. It is now known that they were invented by Amati, of Florence, who died in 1317. He kept the invention secret for profit but it was discovered by a monk of Pisa, Alexander Spina, and made public in 1313. It is not known who discovered the use of the concave lens for myopia. There is little to indicate the use of any magnifying glasses other than spectacles for another 200 years.

The first picture in which spectacles are shown is by Modena in the Church of San Nicola in Treviso and is dated 1360. (Fig. 1). A portrait of

Figure 1. Portrait of Cardinal Hugues, by Modena. 1360. The first picture in which spectacles are shown.

Pope Leo X by Raphael was done about 1513. In this picture the Pope is shown holding a hand magnifier, evidently intended for examining a book that is open before him.

Some of the illuminated manuscripts of the 15th and 16th century have such minute detail that it is frequently thought that some such aid to vision must have been used. However, such workers sometimes have unusually keen vision. One has only to consider the minute detail of the modern well known etchings of John Taylor Arms. The first illustrated publication with evidence of the use of the magnifying glass appeared in 1592 at Frankfort, bearing the name of George Haefnagel. It consists of a series of plates engraved on copper, illustrating common objects of nature with exceptional skill and detail. Singer is of the opinion that some of these reveal enlarged detail not distinguishable to the unaided eye. This is not proved. They are supposed to have been drawn by Haefnagel's son Jacob then 17 years of age. In 1606,

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Fabio Colonna, a botanist, published a work showing enlarged details of plants that undoubtedly were the result of magnification.

The first medical application of the simple microscope, or single magnifying lens is found in the researches of Thomas Mouffet concerning scabies or the itch mite. This work was done in 1589 but was not published until after Mouffet's death by Mayerne (1634). This tiny mite is just within the limits of unaided vision, the largest reaching 450x350 u. It is frequently mentioned by early writers as illustrating the extreme complexity of minute nature and as representing the smallest possible living form, indivisible and a veritable "living atom." Mouffet says — "This is the smallest living creature that is, which used to breed in cold cheese and wax and also in man's skin. It dwells so under the skin that when it makes its mines it will cause a great itching, especially in the hands and other parts affected with them and held to the fire. If you pull it out with a needle, and lay it on your nail, you shall see it move in the sun that helps its motion. Crush it with the other nail and it will crack with a noise and a watery venom cometh forth. It is of a white color except the head. If you look closer it is blackish, and from black it is something reddish. It is a wonder how so small a creature that creeps with no feet, as it were, can make such long furrows under the skin."

Mayerene added a preface which includes a microscopic description. "If you take lenticular optic glasses of crystal you will admire to see their backs stiff with bristles, their legs rough with hair, and between two foreyards there stands a hollow trunk to torture men, which is a bitter plague to maids. — You shall see the eyes sticking forth, and their horns, their bodies crannied all over, their whole substance diaphanous, and through that the motion of their hearts and bloud as if it floated through Euripus."

The first published picture of the Acarus of Scabes was by Hauptman in a work on baths in 1657. He discovered that certain natural baths were helpful. It is probable that the water contained sulphur.

He says: "These vermicules, as far as I could make them out clearly under the microscope, presented to my eye a monstrous form with many long tails sticking out behind. My unskilled pen may thus construct a rough form thereof". (Fig. 2).

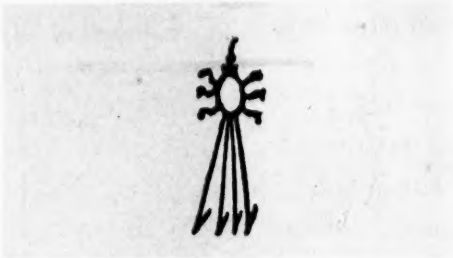

Figure 2. Acarus scabiei as pictured by Hauptman in 1657. (From Singer).

In 1687 Griendelius of Nuremburg in a work titled "Micrographia Nova" presents a hideous monster well calculated to disturb the most phlegmatic of patients. It was another hundred years before doctors were convinced as to the relationship of this minute creature to scabies.

We must leave this interesting history of the hand worm and return to our consideration of the magnifying lenses that made him visible.

Although the compound microscope with its increased magnification was invented about 1616 they gave so much chromatic and spherical aberration and such an extremely small field that many workers reverted to the single lens.

The earliest simple microscopes consisted of a short tube of opaque material with a lens at one end and a flat glass plate on which the object to be examined was placed at the other. (Fig. 3). It was

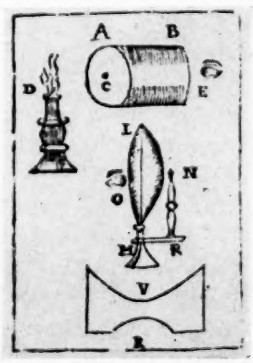

Figure 3. A simple microscope as pictured by Kircher in "Ars Magna Lucis et umbrae", 1642. The insect to be examined is placed on the glass plate at C. (From Clay and Court).

called a vitrea pulicaria because it was used to examine small insects. Later it was known as an Engyoscope. By 1663, well made instruments of this type were common in Holland.

In 1637, Descartes in his book "Dioptrique" described a somewhat elaborate form of simple microscope with which the rays of light were focussed on the object by a concave mirror in the center of which was an opening behind which the lens was placed. A hundred years later (1738) Lieberkuhn devised a microscope employing this principle — he used both simple and compound lenses and his microscope continued to be used until about 1900. (Fig. 4).

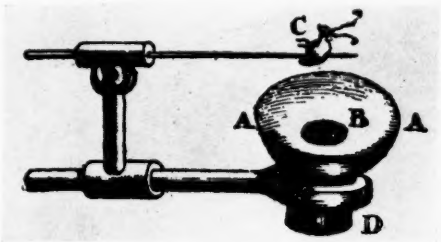

Figure 4. Lieberkuhn's Microscope. 1738. The light is focussed on the object by a concave mirror B in the center of which is an opening behind which the lens is placed. (From Carpenter).

It was Anthony van Leevwenhoek who perfected these instruments. (Fig. 6). He ground minute

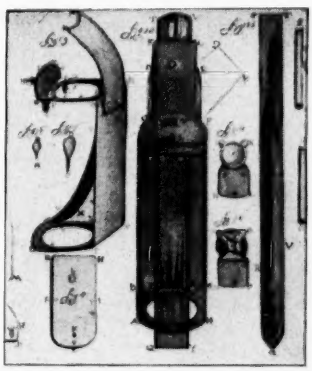

Figure 6. One of Leevwenhoek's "Aquatic" Microscopes. The capillary circulation in the tail of the small live eel in the test tube could be studied. (From Carpenter).

lenses of short focal length. He never revealed his method of grinding. He reached magnifications of 200 and 300 diameters. He was the first to cut sections, using a razor, some of these are still extant. He succeeded in using transmitted light for transparent objects. Infusoria were seen with ease and by 1683 he had seen bacteria. His observations were first communicated to the Royal Society of London in 1673. In 1798, Samuel Hoole translated them into English and published them with reproductions of the original plates. The frontispiece is a portrait of Leevwenhoek (Fig. 5). Under it is

Figure 5. Anthony von Leevwenhoek. (From Hoole).

this: "For we cannot in any better manner glorify the Lord and Creator of the universe, than that in all things, how small soever they appear to our naked eyes, which yet have received the gift of life and power of increase, we contemplate the display of his Omnificense and Perfections with the utmost admiration."

The Dutch motto on the title page is from Jacob Cats (The Horace of Holland). "Where thou beholdest the curious works of nature, do not be content with merely gazing at their beauties but raise thy thoughts to the contemplation of Him by whom everything that is fair and beautiful was created." Leevwenhoek reached the high water mark of the simple microscope. After him most high class microscopic work was accomplished with the compound microscope.

The early history of the compound microscope is intimately involved with that of the telescope. The first known writer to suggest the possibility of using a system of lenses to make a distant object appear nearer was the English mathematician Leonard Digges who died in 1571. In a work called "Pantometria" published after his death by his son — he says; "Marveylouse are the conclusions that may be performed by glasses concave and convex

of circular and parabolical forms.—By these kinds of glasses, or rather by frames of them placed in due angles, ye may not only set out the proportion of an whole region, you represent before your eye the lively image of every towne, village, etc. and that in a little or great space or place as ye will prescribe, but also agment and dilate any parcell thereof, so that whereas at the first appearance an whole towne shall present itself so small and compact together that ye shall not discerne any difference of streates, ye may by application of glasses in due proportion cause any particular house or roume thereof to dilated and show itself in as ample form as the whole towne first appeared, so that ye shall discerne any trifle or read any letter lying there open, especially if the sonne beames may come unto it, as playnly as if you were corporally present, although it be distant from you as far as the eye can discharge. But of these conclusions I mind not here more to intreat, having at large in a volume by itself opened the miraculous effects of perspective glasses". Unfortunately, his further description was never published.

In 1588, G. Battista della Porta of Naples published a work called "Magia Naturalis". This was a sort of hotchpotch of the wonders of the world at that time. He tells how "to make plain a letter held far away by means of a lens or crystal". He must have been myopic because he says "concave lenses enable one to see far off more clearly while convex ones make near objects more discernible. If, however, you know how to combine the two sorts properly you will see near and far both large and clear."

A short time after Porta's publication a Dutchman Zacharias Jannsen made a combination of two lenses into a compound microscope. Born at Middleburg, Holland about 1580, he worked in the shop of his father who was a spectacle maker. When only about 10-12 years old he accidentally discovered the principle of the compound microscope by placing two lenses together in a tube. (Fig. 7.)

The microscope was introduced to the scientific world by Galileo. In 1610, he wrote in "Sidereus nuncius" — "About ten months ago a rumour reached me of an ocular instrument made by a certain Dutch lens maker by means of which an object could be made to appear distinct and near to one's eye that looked through it — and so I considered

Figure 7. Zaccharias Jannsen, the inventor of the Compound Microscope. (From Spencer Lens Company).

the desirability of investigating the method, and I reflected on the means by which I might come to the invention of a similar instrument. A little later making use of the doctrine of refraction I first prepared a leaden tube at the ends of which were placed two lenses, each of them flat on one side, and as to the other side I fashioned one concave and the other convex. Then moving the eye to the concave one I saw the objects fairly large and nearer, for they appeared three times nearer and nine times larger than when they were observed by the naked eye. Soon after I made another more exactly, representing objects more than 60 times larger. At length sparing no labor and no expense I got to the point that I could construct an excellent instrument so that things seen through it appeared almost a thousand times greater and more than thirty fold nearer than if observed by the naked eye."

The "Sibereus Nuncius" also contains the first rough figure of the path of light rays in a bilenticular system.

A curious form of compound microscope was described by the philosopher Des Carte in 1637. This was an adaptation from the telescope. It consisted of an adjustable tube carrying two lenses. The eye piece was plano-concave. The objective was a double convex lens mounted in the center of a concave mirror, which concentrated the rays on the object. Light was also concentrated on the object by a second plano-convex lens placed in the

direct line of light after the manner of a modern substage condenser.

The earliest recorded observation with the compound microscope that has come down to us is by Galileo himself but we get it third hand. In a work dated 1610, a Scot, John Wodderborn says, "A few days back I heard the author himself narrate to that noble philosopher, the most excellent Signor Cremonius, various things worthy to be known, and among others how he perfectly distinguished with his perspicillum the organs of motion and of sense in the smaller animals but especially in an insect which has each eye covered by a thick membrane, that is nevertheless perforated with seven holes like the iron visor of a Warrior, thus affording a passage to images of visible things."

In 1603, a group of talented men associated together under the title of the "Academy of the Lynx." They met at the house of the president and founder, Federigo Cesi, Duke of Aquasparta. This was probably the first scientific society. In addition to Cesi, the members included Galileo and Porta (already mentioned) Colonna a botanist, Stelluti a naturalist, Faber, physician to Pope Urban VIII and Fontana, an astronomer.

Federigo Cesi, founder and President of the Academy of the Lynx, is sometimes called the father of microscopy.

Johannes Faber, the physician, in a work published in 1628, after explaining that he himself had coined the word microscope relates how Cesi had discovered the spores of ferns and also mentions that Stelluti had described the microscopic anatomy of the bee and had had copper engraving made.

This work of Stelluti was not published until two years later (1630). These pictures of the bee are the first published figures for which the compound microscope was used. The reason for studying the bee is explained by the fact that on the crest of their patron, Pope Urban VIII, was a group of bees. Stelluti says "Prince Cesi has discoursed of these animals (bees) with the greatest erudition, ingenuity and originality, condensing volumes into a single page. On that account I also have used the microscope to examine bees and all of their parts, whose form, since they are worthy of the attention of all, I have rendered. I have also figured separately all those members discovered by me with the aid of the microscope, to my no less joy than marvel, since they are unknown to Aristotle and to every other philosopher and naturalist. For greater clearness moreover I enumerate, part by part, each of the members as verified by our Fabio Colonna, a companion of the Lynx, who on my suggestion made the same investigation on this wonderful little animal with all skill and diligence. That which Signor Fabio examined and interpreted was then drawn by Signor Francesco Fontana — and then I, on my part, caused to be engraved here in Rome, in complement to our noble Lord, Pope Urban VIII, three large bees, drawn in such detailed form as was revealed by the glasses of that microscope. I had them figured from three aspects, front, back and side as may be seen in the adjoining page." (Fig. 8). These were unrivaled

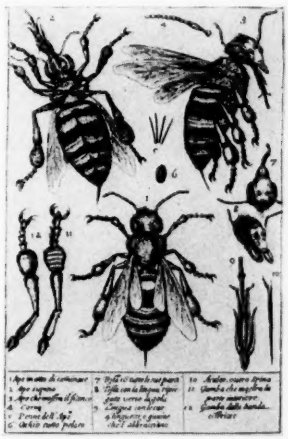

Figure 8. Figures of bees by Francesco Stelluti in "Persio Tradotto". Rome, 1630. These are the first published figures made with the compound microscope. (From Woodruff).

in accuracy of detail for two generations.

The next figures published were in 1644 by Giambattista Hodierna who published investigations of the eyes of insects. He claimed to have examined 34 species. Figure shows his figures of

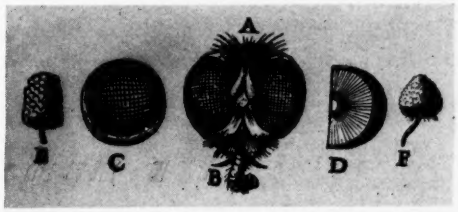

Figure 9. The eyes of a fly as pictured by Giambattista Hodierna in 1644. (From Singer).

the eye of a fly. His description reads "AB represents the entire head of the animal cut off from the rest of the body. It may here be seen that the head is all eyes, prominent and without lids, lashes or brows. It is plumed with hairs like that of an ostrich and has two little pear shaped bodies hanging from the middle of the forehead. The probosis, which arises from the snout, can be extended freely and stretched forth to suck up humors, and can afterwards be directed back through the mouth to be taken into the gullet. This instrument nature has given the creature according to its need, for it is without a neck and cannot stretch forth its head to obtain its food, as is also the case of the elephant. C represents the whole eye cut off from the head AB, on which can be seen more than thirty thousand little figures (quadretti) imprinted on the surface of the red cornea. D represents half of an eye cut from the surface to the center, so that the disposition of the crystalline structures can be seen. The crystalline structures with their bases on the surface of the cornea, pass in a pyramidal fashion to end on the little tunic of the uvea. This occupies the center of the eye, and in its interior the cerebral substance is enclosed. E is a white mulberry fruit which resembles the fly's eye in its similar disposition of facets, as does also the strawberry represented at F."

One of the earliest practical users of the compound microscope was the astronomer Francisco Fontans, of Naples, a member of the Academy of the Lynx. In 1646, he published a book entitled "New Observations of the Things Of Heaven And Of Earth." This consisted of eight tractates. Seven had to do with astronomy while the eighth is entitled "Of The Microscope, by means of which the most minute and quasi-invisible things are so enlarged that they may be clearly and distinctly seen." In this are observations on mites in cheese, the structure of the flea, the ant, the fly and other subjects including the human body. For example: — "On the creatures that arise in powdery cheese." "The powder examined by means of this instrument does not present the aspect of dust but teems with animicula. — It can be seen that these creatures have claws and talons and are furnished with eyes. The whole surface of their body is beautifully and distinctly colored in such sort as I have never before seen, and which indeed cannot be seen without wonder. They may be seen to crawl, eat and move and are equal in apparent size to a man's nail. Moreover their backs are all spiny and pricked out with various star-like markings and surrounded by a ramport of hairs, all of such marvelous kind that you would say they are a work of art rather than of nature."

In this work he also claims to have invented the microscope in 1618. This claim will hardly bear critical examination.

In 1652 a few random microscopic observations were recorded by the Italian physician Penarola but probably the first practical physician who used a microscope was the Frenchman Pierre Borel (1620-71). He possessed and used a microscope before 1649. His "Historiarum et Observationum Medicophysicarum," in 1653 is the first medical work involving the use of the microscope. The following quotation suggests that he had seen the blood corpuscles.

"On whale shaped Insects in Human blood — Animals of the shape of whales or dolphine swim in the human blood as in a red ocean. These creatures it may be supposed, since they themselves lack feet, were formed for the bodily use of the more perfect animals within which they are themselves contained and that they should consume the depraved elements of the blood." In 1656 Borel published 100 microscopic observations constituting the first book devoted to microscopy. "Observationum Microscopicarum Centuria." The Hague, 1656. He observed and figured minute insects found floating in the air and suggested that some of these were the cause of plague. He saw and removed ingrowing eyelashes that were invisible to the naked eye. He gives the first hint of the cellular structure of tissues. "The heart,-kidneys, testicles, liver, lungs and other parenchymatous organs you will find to be full of little structures (organula) and they are like sieves by means of which nature arranges the various substances according to the shape of the holes. Passage is thus given only to atoms of a certain shape."

Malpighi demonstrated the capillary circulation of the lung in 1661. This completed Harvey's work on the circulation of the blood. "I saw with mine eye a truly great thing. It is clear to the senses that the blood flowed away along tortuous vessels and was not poured into spaces but was

always contained within tubules, and that its dispersion is due to the multiple winding of the vessels."

The first illustration of the use of the microscope in medicine is an illustration in the Acta Eruditorum published in 1686. This illustrates an article entitled "Description of a new microscope made by Joseph Campani and its use." It shows the microscope being used to examine an ulcer of the leg.

Another man who published microscopic observations about this time was the German Jesuit Athanasius Kircher. He was a verbose writer and displayed a remarkable power of absorbing both information and misinformation. In a book on plague in 1658 he describes "worms" in the blood of plague patients that were probably rouleaux formations of red blood cells. On this wrong premis he developed a theory of infection.

He published a description of his microscopes and claimed to have obtained a magnification of 1000X. He recorded a number of experiments of which the following is a typical example. "Experiment II — If you cut up a snake into small parts and macerate it with rain water, and then expose it for several days to the sun, and again bury it under the earth for a whole day and night and lastly examine the parts, separated and softened by putridity, by means of a microscope, you will find that the whole mass swarms with innumerable little multiplying serpents, so that even the sharpest eyes cannot count them." Apparently he saw bacteria. We must admire his diligence and observations but his conclusions leave much to be desired. Perhaps it is not fair to criticize them in the light of present knowledge.

Another Jesuit priest named Gaspar Schott was also a popular writer on science. In "Magia Universalis," published in 1657, one chapter is entitled "Microscopes and their wonderful power in revealing the constitution of natural objects." He describes six types of microscopes and relates an amusing incident — "A certain distinguished and learned gentleman was once traveling from Bavaria through lower Austria into the Tyrol accompanied by his secretary. On his journey having been smitten with fever he was forced to stay in a certain village where he died. Before his body was buried the Mayor and elders examined the baggage of the deceased and found among other things a microscope of the above size and shape with a flea enclosed. The Mayor was horrified and those of the bystanders who examined the microscope declared that the dead man was a sorcerer and that he was carrying a devil about with him shut up in the glass and that therefore he was unworthy of burial. For a long time the controversy raged until at length, I know not whether by design or chance, the instrument having been opened that which they had taken for a devil proved to be a bristly and hairy flea."

Robert Hooke was the first to realize the full importance of studying nature with instruments which increase the power of vision and to convincingly express it in a remarkable book published with the imprint of the Royal Society of London, in 1665. It was entitled — "The Micrographia, or some physiological descriptions of minute bodies made by magnifying glasses and enquiries thereupon." This book is dedicated to the King and this dedication seems to me very interesting. "Sir: I do here most humbly lay this small present at your majesties' royal feet and though it comes accompanied with two disadvantages, the meanness of the author, and of the subject; yet in both I am encouraged by the greatness of your mercy and your knowledge. By the one I am taught that you can forgive the most presumptious offender, and by the other that you will not esteem the least work of nature, or art unworthy of your observation. I presume to bring in that which is more proportionable to the smallness of my abilities and to offer some of the least of all visible things to that mighty King that has established an Empire over the best of all invisible things an Empire over the best men." Later he says — "By the help of the microscope there is nothing so small as to escape our inquiry. By this the earth itself shows quite a new thing to us, and in every little particle of its matter we now behold almost as great a variety of creatures as we were able before to reckon up in the whole universe itself. It seems not improbable but by these helps the subtlety of the comparison of bodies, the structure of their parts, the various textures of their matter, the instruments and manner of their inward motions, and all other possible appearances of things, may come to be more fully discovered."

He describes his microscope and pictures it. (Fig. 10). This is the first figure of a pillar micro-

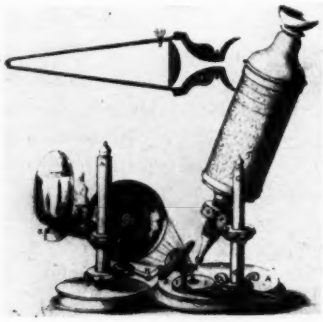

Figure 10. Robert Hooke's Microscope from his Micrographia". 1665.

scope. He describes how he made lenses by fusing threads of drawn glass into small glass balls. He cut sections and hit upon the basic principle of transparent slides and cover glasses. He discusses the texture of cork and for the first time describes "little boxes or cells." This use of the word cell is responsible for its application to the Protoplasmic units of modern biology. One of his pictures has in it something very like a nucleus but this may be accidental. This book had an immense influence. Reproductions of its beautiful plates appeared in technical and popular manuals on the microscope for a century and a half. (Fig. 11).

Figure 11. Robert Hooke's Illustration of a Blue Fly. From "Micrographia". 1665.

From this time on magnification was established as a fundamental and indispensable aid in biological research. Outstanding among the early microscopists are Malpighi in Italy, Grew in England and Swammerdam in Holland.

The further developments of the compound microscope was due largely to English instrument makers. However a few Italians deserve mention. In 1668 a description was published of a compound microscope by Divini. Cherubin d'Orleans published a design for a microscope in 1671. He also first invented a form of binocular microscope published in 1677. But the next important microscope after Hooke's was made by Marshall in London in 1693. He had fine lenses. He introduced the fine adjustment. The condensing lens is on a jointed arm. (Fig. 12). This was the first compound microscope made for sale in England.

Figure 12. John Marshall's Microscope. The first compound microscope made for sale in England. (From Clay and Court).

In 1716, Hertal introduced the plane mirror for illumination of the object. Direct illumination only had been used before this time. Culpepper, in 1730, suggested the three pillar type of stand in place of the single pillar of Hooke and Marshall. He used a concave mirror in the optical axis of the instrument. Focussing was done entirely with the draw tube. Benjamin Martin made the microscope used and described by Professor Quekett. In 1771, George Adams of London, published a book "Micrographia Illustrata" describing all types of microscopes then in use and a new one of his own design. It was the first to have a triple nose piece.

One of the earliest books on the microscope is by Henry Baker — "The Microscope Made Easy" — in 1746.

In this country the microscope was first used in Boston. Cotton Mather had one and in a sermon in 1686 he tells about seeing animacules in ink. However, Edward Bromfield seems to have been the

first New England microscopist. He made his own microscopes. He did not record his own work but he demonstrated his findings to the Rev. Thomas Prince, Pastor of Old South Church who writes about them in the American Magazine, Boston, November 30, 1746. He here describes defecation in the louse "Until we see his fluids boiling, his muscular parts in convulsions and death ensues from the collected sunbeams."

130 years later, about 1877, Oliver Wendell Holmes made traveling or demonstration microscopes for teaching purposes, similar to Queketts at the Royal College of Surgeons but without the tramway. This consisted essentially of a wooden box within which a microscope and an oil burning lamp could be fixed and was passed about from student to student.

From this time onward the development of the microscope was largely a matter of improvements in lenses and optical systems. The splendid results are known to all who use the microscope but their explanation is much beyond the writer's meager knowledge of the science of optics.

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THE RHODE ISLAND MEDICAL JOURNAL
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You will find in the membership of your local and state medical societies, as well as in the specialty organizations, the best expression of this guild spirit: a genuine friendliness and unselfish willingness to share each other's special knowledge and attainments.

From *The Measure of a Physician's Greatness*

by Charles F. Gormly.

DR. FREDERICK N. BROWN, *Editor*

On May 23, 1942, Dr. Frederick N. Brown died in his eightieth year. Born in Coventry on March 5, 1863, he came of sturdy, self-reliant Rhode Island stock and throughout his long life displayed those qualities of physique and character which were the natural embodiment of such an inheritance. Like so many other boys of his age he enjoyed no more than the somewhat meager advantages of the local school and then set out to make his way in the world equipped with small means, good health and an ardent spirit. He came to Providence as a young man and for a time was engaged in one or another mercantile pursuit; he worked as a clerk in various stores and also tried his hand as a salesman of oil. But his heart was not really in the world of business; for business was to him merely

a means of accumulating enough money to enable him to pursue his real object which was to become a physician. And so he entered the Dartmouth Medical College from which he was graduated in 1894.

Although he was already 31 years old when he received his medical diploma and would naturally desire to enter practice forthwith, he was still harassed by the lack of money to do so and therefore he was once again compelled to enter the field of business. He obtained employment with a firm which called itself the Indo-American Co. The main office of this firm was in Calcutta and to Calcutta young Dr. Brown proceeded, filled, no doubt, with the hope and the expectation that in India he would find the solution of his financial difficulties. But it was not to be; for after three years of work he found himself worse off than ever. The Indo-American Co. was a failure and Dr. Brown was poorer in everything but experience, an experience, however, which stood him in good stead in after years and enabled him to deliver numerous interesting talks to various clubs and associations concerning the life, habits and social customs of the people of India. Nothing daunted by his unlucrative sojourn in the East, he returned to America.

In 1898 he opened his office in Providence at 1228 Westminster street where he lived and practiced medicine for the next 19 years. In the same year he married Miss Mary Woodhull Coombs who became his constant companion in work and play and who pre-deceased him only one year ago.

In addition to the demands of a considerable general practice Dr. Brown took upon himself the responsibilities of the editorship of the Rhode Island Medical Journal, a task he performed with energy and distinction from 1920 until 1936. Under his guidance, supplemented by the astute business management of Dr. Skelton, the Journal continued and enhanced its reputation as a worthy representative of the ideals and the scientific attainments of the medical profession in this State. Dr. Brown was not only a competent physician and a resourceful editor; he was also one of the first physicians to use the newly arrived automobile, and it is interesting to recall with what pleasure he drove about in his small Maxwell car which in these days was manufactured in Auburn.

If virtue is its own reward, then the present editorial board of the Rhode Island Medical Journal must feel the glow of satisfaction which comes from the sense of duty well performed. But when Dr. Brown was editor of the Journal there was something more than this to stimulate the sometimes flagging spirits of those of us who were associated with him. We were summoned by Dr. Brown, with all due solemnity, to attend an annual dinner in honor not of Aesculapius only, but of ourselves. The presiding genius of the joyful occasion was, of course, the editor of the Journal, but he was aided and abetted by a resourceful Bacchant whose official title was maître d'hôtel of the famous caravansary called the Biltmore. And this was no ordinary dinner. Enriched by his Indian learning Dr. Brown called it Chotakhana, — The Little Dinner of Don't Care. A scribe from the Providence Journal who was allowed to play a modest part in the ritual reported to his readers the next morning that "nearly all present being medical men, appetites were unimpaired and, to aid in the assimilation of the food, several selections were given between courses by what began as a quartet but gradually increased to sextet proportions." There were speeches by anyone and at times by everyone, not to mention selections from famous operettas such as Robin Hood, the Mikado and Pinafore. Benignantly directing the whole affair was Dr. Brown, who as toastmaster, seemed to derive whole-hearted pleasure from this assembly of his associates. One should not fail to note that the bill was paid by Dr. Skelton.

And now that he is gone, it is good to remember him as a straightforward, loyal, honorable gentleman, a physician of the old school which had faults, no doubt, but withal had in abundance those virtues which have made of medicine a noble and ennobling profession. To the memory of Dr. Brown the Rhode Island Medical Journal is honored to pay its tribute of gratitude and respect.

RHODE ISLAND DOCTORS IN SERVICE

At the Annual Meeting of the Rhode Island Medical Society Dr. Buffum read the following list of Rhode Island physicians and recent internes and residents in the armed forces.

We are proud to print this list.

This list includes all Rhode Island doctors whom we know to be in service whether members of the R. I. Medical Society or not.

Dr. Richard E. Allen of Cranston
Dr. Michael Arciero of Providence
Dr. Robert R. Baldridge of Providence
Dr. E. Joseph Bernasconi of Providence
Dr. Anacleto Berrillo of Providence
Dr. Clarence E. Bird of Providence
Dr. Reginald H. Boucher of North Providence
Dr. Russell S. Bray of Providence
Dr. Abe A. Brown of Providence
Dr. Francis H. Chafee of Providence
Dr. Herbert W. Coone of Providence
Dr. G. Edward Crane of Providence
Dr. Morgan Cutts of Providence
Dr. Jeremiah Dailey of Cranston
Dr. William P. Davis of Providence
Dr. Palmino DiPippo of Providence
Dr. Charles S. Doucet of Central Falls
Dr. Robert W. Drew of Warren
Dr. Peter C. H. Erinakes of West Warwick
Dr. Duncan H. Ferguson, Jr. of Pawtucket
Dr. Walter F. Fitzpatrick, Jr. of Providence
Dr. Joseph C. Flynn of Providence
Dr. Charles H. Gannon of Providence
Dr. Philip Geller of Newport
Dr. Morris L. Grover of Providence
Dr. Robert M. Halbach of Jamestown
Dr. F. Charles Hanson of Providence
Dr. Waldo Hoey of Providence
Dr. John D. Hubbard of Providence
Dr. William N. Hughes of Providence
Dr. Frank C. J. Jadosz of Providence
Dr. George A. Keegan of Woonsocket
Dr. Joseph C. Kent of Pawtucket
Dr. Francis D. Lamb of West Warwick
Dr. Frank B. Littlefield of Providence
Dr. J. Goheen McWilliams of Providence
Dr. Herman Marks of Central Falls
Dr. Thomas A. Martin of Providence
Dr. Gordon E. Menzies of Wickford & Providence
Dr. Cecil J. Metcalf of Providence
Dr. John A. Mellone of Bristol
Dr. Whitman Merrill of Washington
Dr. Himon Miller of Providence
Dr. James B. Moran of Wallum Lake
Dr. Ira C. Nichols of Providence
Dr. Louis A. Normandin of East Providence
Dr. Nathaniel D. Robinson of Pawtucket
Dr. David Rogell of Warren
Dr. Harold Rogell of Providence
Dr. William J. Schwab of Providence
Dr. Thomas P. Sheridan of Providence
Dr. Bernard I. Sherman of Providence
Dr. Joseph Smith of Providene
Dr. Edmond B. Sinclair of Providence
Dr. H. Frederick Stephens of Providence
Dr. Eric Stone of Providence
Dr. William A. Stoops of Newport
Dr. Gustaf Sweet of Providence
Dr. Francis E. Temple of Wallum Lake
Dr. Edwin Vieira of East Providence
Dr. Guy W. Wells of Providence
Dr. Lloyd C. Wilson of Providence

Former Residents and Internes: — Not Practicing

Dr. Philip L. Dunkle of Wallum Lake Sanatorium
Dr. Paul L. Dunstan of Howard
Dr. Wallace J. Pianka of Homeopathic Hospital
Dr. Gabriel C. Sutch of Howard
Edward M. Gunn, M.D. of Rhode Island Hospital
Ernest Gaillard, M.D. of Rhode Island Hospital
Donald B. Larkin, M.D. of Rhode Island Hospital
Charles F. Begg, M.D. of Rhode Island Hospital
A. Henry Claggett, M.D. of Rhode Island Hospital
Raymond F. Higgins, M.D. of Rhode Island Hospital
Charles L. York, M.D. of Rhode Island Hospital
Philip Spelman, M.D .of Rhode Island Hospital
Hubert Holdsworth, M.D. of Rhode Island Hospital
Bruce W. Smith, M.D. of Rhode Island Hospital
Herbert F. Hager, M.D. of Rhode Island Hospital
Richard Rice, M.D. of Rhode Island Hospital
Palmer Congdon, M.D. of Rhode Island Hospital

In addition thirty others have signed up with the Rhode Island Hospital Army Unit. Their names will be printed when the Unit leaves.

RHODE ISLAND MEDICAL SOCIETY

SECRETARY'S REPORT

May 21, 1942

The Regular Meetings of the Council and House of Delegates have been held during the past year. The Annual Meeting of the Society was held at Newport, and, as has become a custom, the President called a Midwinter meeting of the Society for an evening scientific session. An additional evening meeting was sponsored by the Society to hear Dr. Heyl tell about war experience in England.

During the last eight months Dr. Hussey and the officers of the Society have held monthly so-called Cabinet meetings to discuss their duties and to plan the administration of the Society in so far as it depends on the officers. These meetings have been of great value and have enabled the secretary to share with the group many problems which would otherwise have been decided with much less wisdom. These meetings have shown how much we need an executive committee which would meet more frequently than the House of Delegates.

The present set up of medical societies in Rhode Island is unusual. The R. I. Medical Society spends the greater part of its income in maintaining the Library. The Providence Medical Association runs an excellent executive office with a well organized executive committee and a fine executive secretary. This latter organization can adequately handle the many problems connected with the State Government and Legislature and with public relations of all kinds. It is becoming increasingly evident to both societies that it would be preferable, if it could be arranged, to have the State Society with its larger and broader membership control the relations with the State Government and the public through its own executive office.

Any change of this character will obviously have to be desired by both societies and especially by the Providence Medical Association which would be voluntarily resigning a great deal of power and prestige. The executive committee of the Providence Medical Association has invited the officers of the Rhode Island Medical Society to meet with them in the fall to continue these discussions.

The proposed changes in the rules and by-laws are an important development of the year but as Dr. Hammond will report on these, they are not discussed here.

At the last meeting of the House of Delegates the resignation of Dr. Miller as Editor of the JOURNAL was reported. Since then Dr. Peter P. Chase has become Editor and is attacking his problems with great vigor and skill.

The membership of the Society during the last year has increased from 496 to 561. This increase has strengthened us enormously although from a strictly financial point of view it may be more than counter-balanced by a loss in membership dues of those in military service.

The most important function of the Society during the year has been its cooperation with the Government Office of Procurement & Assignment of Physicians. Heretofore there has been a good deal of confusion as to how urgent the need was and as to who should go. Now that it is obvious that the need is great and now that Colonel Wells is here with information and authority to answer all questions the problems of our members should be settled more readily.

It is impossible to be certain that these figures are correct but the records show that out of our membership 27 are in active services with the armed forces. Probably more than 50 additional men have received their commissions and are waiting orders or are expecting their commissions soon.

The medical problems in the communities at home are likely to be urgent and severe. It is in times like these that our medical societies should be most useful. Any problem that is brought to the attention of the secretary will be promptly brought to the attention of the President and officers. Until an executive committee is established it may be necessary to have more frequent meetings of the House of Delegates.

The members are urged to apply to the Secretary for any information of any kind that it is in his power to get.

During the past year under Dr. Hussey's direction the affairs of the Society have received a great deal of attention and the Society owes him a debt of gratitude for his wisdom and patience in handling the many problems that have come up.

Dr. Morgan Cutts, the Assistant Secretary, is now serving in the Army. During the past year his suggestions and advice were very valuable.

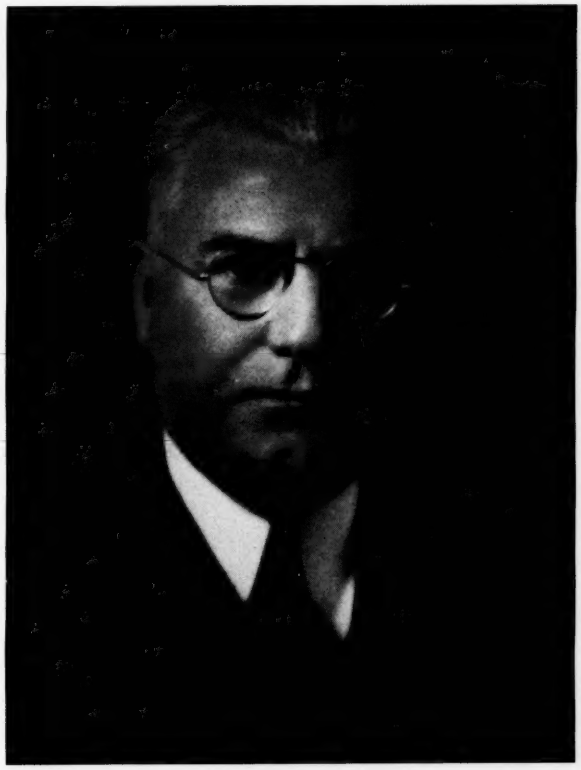
Thanks are due to Miss Dickerman and Miss Moffitt for their helpfulness. They always find time to do one thing more.

Respectfully submitted,

WM. P. BUFFUM, *Secretary*

THE RHODE ISLAND MEDICAL SOCIETY

Officers and Committees for the year 1942-43



President ..... Charles F. Gormly, Providence

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Murray S. Danforth, Providence
Second Vice-President, Elihu S. Wing, Providence
Secretary ..... William P. Buffum, Providence
Assistant Secretary .... Alfred L. Potter, Providence
Treasurer ..... Jesse E. Mowry, Providence
Assistant Treasurer,
Charles J. Ashworth, Providence

Auditors
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Joseph W. Reilly, Woonsocket

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Francis H. Chafee, Providence
Earl F. Kelly, Pawtucket
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Committee on Publication
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John F. Kenney, Pawtucket
Augustine W. Eddy, Woonsocket
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Committee on Education, State and National
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John Langdon, Providence
G. Raymond Fox, Pawtucket
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Committee on the Library
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Samuel Adelson, Newport
Adolph W. Eckstein, Providence

Committee on Necrology
Edward T. Streker, *Chairman,* Providence
James C. Callahan, Newport
John W. Helfrich, Westerly

Committee on Arrangements
Ralph L. DiLeone, *Chairman,* Providence
Edward F. Burke, Providence
Kenneth G. Burton, Providence
The Treasurer, ex officio

Delegate
Guy W. Wells, Providence

Alternate
William P. Buffum, Providence

Reports presented to the House of Delegates
May 21, 1942

PRELIMINARY REPORT OF THE COMMITTEE ON REVISION OF THE RULES AND BY-LAWS OF THE RHODE ISLAND MEDICAL SOCIETY

This Committee was appointed a year ago at the May meeting of the House of Delegates. Our instructions were to recommend such changes in the Rules and By-Laws as would give this document more flexibility, to interpret certain ambiguities in the text, and to propose any additional provisions which were deemed necessary to facilitate the business of the Rhode Island Medical Society. The urgent need was to change the wording of Article V, having to do with sessions and meetings, so that the annual meeting can be held without violating the provisions of the Rules and By-Laws. It was necessary to disregard this covenant in arranging the date of the meeting in Newport last year.

No revision of the Rules and By-Laws has been made since 1915, except for some minor amendments to five of the Articles, passed in 1936. The document is in need of changes to bring it up to date, in order that the business of this Society may be conducted more easily and efficiently.

Your committee has devoted much time and thought to this revision, and has analyzed the Constitution and By-Laws of most of the state medical Associations in the United States, together with that of the American Medical Association. We have formulated certain principles which we believe should be incorporated in a revision of the Rules and By-Laws of the Rhode Island Medical Society, and we herewith submit these recommendations to the House of Delegates for deliberation. The completion of this task may be expected to require an extension of time from six months to one year from this date.

Your committee presents the following proposals and changes in the Rules and By-Laws:

(1) The annual meeting shall be held at a time and place to be fixed by the House of Delegates.

(2) The officers shall consist of a President, President-Elect, Vice President, Secretary, Assistant Secretary, Treasurer, Assistant Treasurer, the Councillors of the District Societies, the Standing Committees and two Auditors.

(3) The Council shall be the Executive Committee of the House of Delegates. It shall meet bimonthly or oftener as may be necessary. The Council shall consist of the five most recent past Presidents of this Society, the Officers, and the Councillors of the District Societies. The Council shall act as a Finance Committee of the House of Delegates, and shall make recommendations to the House of Delegates on all matters affecting the business of the Society. The Council shall act as the Nominating Committee and shall submit a list of officers and Standing Committees to the House of Delegates.

(4) Your committee recommends that the provision fixing a limit of $10.00 as the amount of the annual dues be changed so that the House of Delegates may have the authority to establish an equitable tax under conditions prevailing at the time of meeting.

(5) It has been necessary to insert new Sections in certain of the Articles of the Rules and By-Laws, and numerous changes in word and phrase have been made. Provision has been made for the employment of an Executive Secretary at a favorable opportunity in the future.

Respectfully submitted,
ROLAND HAMMOND, M.D., *Chairman*

REPORT OF THE COMMITTEE ON THE LIBRARY

The work of the Library has gone on as usual, during the year, with some increase in activity, especially with respect to inquiries from the lay public in regard to medical matters.

The total number of visitors to the Library was 1982.

127 volumes were added; 21 by purchase, 61 by gift, and 45 volumes which were sent to the Rhode Island Medical Journal for review. Special attention should be paid to this fact, because in the year past the number of books submitted has been greater than in any previous year, and it is evident that the publishers are well impressed by the reviews appearing in the JOURNAL.

Among the purchases worthy of note are the following:

Bibliotheca Osleriana, a work which should be in every reference library.
Geoffrey St. Hilaire — Histoire generale et particulaire des anomalies de l'organisation, 1832-37, 4 volumes. This is also an important and scarce work.
Both these items have been placed in our rare book section.

Gifts from the Fellows of the Society have been as follows:

From —

H. H. Armington, M.D. 2 volumes
Charles Bradley, M.D. 1 "
Roland Hammond, M.D. 1 "
(Badianus Manuscript)
Michael E. Vance, M.D. 18 "
Stephen A. Welch, M.D. 22 "

In addition, many journals and pamphlets have been received from various sources.

104 volumes of periodicals have been bound.

Circulation:

of Journals 697
Books 128
Interlibrary requests to other Libraries and from other Libraries to our own 18.

The number of books and journals catalogued to date is 20,169.

The number of books in the Library is 32,977.

We have received during the year, by subscription and exchange, 133 Journals. For the past six months, none of the European or Japanese Periodicals have been delivered, but there have been added several journals from Cuba, and one from Mexico.

The Library has been under the immediate supervision of the Librarian, Miss Grace Dickerman, and her Assistant, Miss Helen Moffitt, and great credit is due them for their cooperation and their efficiency.

Respectfully submitted
H. G. PARTRIDGE, M.D., *Chairman*

COMMITTEE ON NECROLOGY

Your Committee on Necrology herewith submits its report of deaths of members of this Society which have occurred during the past year:

J. Fulgence Archambault, M.D., West Warwick. Died June 26, 1941.

Oliver F. Best, M.D., Providence. Died August 3, 1941.

Charles S. Christie, M.D., Attleboro, Mass. Died December 18, 1941.

John T. Farrell, M.D., West Warwick. Died October 13, 1941.

Frank S. Hale, M.D., Providence. Died January 12, 1942.

Henry J. Hoye, M.D., Providence. Died April 26, 1942.

Respectfully submitted,
EDWARD T. STREKER, M.D., *Chairman*

HOUSE OF DELEGATES
RHODE ISLAND MEDICAL SOCIETY

I beg leave to submit the following annual report of the Board of Trustees of the Library Building for the period from April 30, 1941 to April 17, 1942.

Forty-two meetings were held in the building during this period. Repairs were made to the plumbing and replacements in both the men's room and the Janitor's apartment. We recommend repair of the wood around the windows and the painting of the outside of the building.

Since the close of the last year on April 17, 1942, the Board of Trustees of the Medical Building have proffered the temporary use of the Building to the R. I. Recruitment Board of the Procurement and Assignment Division of the U. S. Army. This R. I. Recruitment Board is headed by Lt. Col. Guy W. Wells formerly secretary of this medical society. Conversations and negotiations are now going forward with the various authorities involved to establish this occupancy on a more stable basis for the duration of the need in this emergency.

Signed
CHARLES F. GORMLY, *Chairman*

CLINICAL-PATHOLOGIC CONFERENCES OF THE RHODE ISLAND HOSPITAL

DR. B. EARL CLARKE, *Editor*

CASE RECORDS AS USED IN THE BI-WEEKLY OPEN MEETINGS.

CASE *presented by* DR. JACOB P. WARREN

F. F.: White American auto-salesman of 45 years.

C. C.: Diarrhea of 18 months duration.

F. H.: Father died at 76 of a "stroke." Mother died at 56 of a ruptured appendix. One family of cousins had tuberculosis with whom patient disclaims contact.

P. H.: Patient born and always lived in Rhode Island. Rheumatic fever at 14; Iritis at 14, 16 and 18 years of age; arthritis at 20 with recurrent swelling of left knee and ankle; pyelitis at 21; pleuritic chest pain on several occasions 10 years ago. No cough — no sputum.

P. I.: Eighteen months ago began to have increasing number of bowel movements until one month ago he was having 8 to 10 during each day

and night. On admission movements were occurring as often as every 15 minutes, and were black and watery. He had no iron therapy during this time. For a few months prior to admission the diarrhea was associated with gnawing epigastric pain and with intermittent low abdominal cramps. The diarrhea was worse under emotional stress.

P. E.: On admission T-101, P-130, R-20, B. P-100/60. A well developed but very poorly nourished white male showing much weight loss.

Head and neck — Negative.

Chest — Emphysematous contour, resonant to percussion, distant vesicular breath sounds throughout; no rales.

Heart—Normal size, rhythm regular, rate rapid. There was a 1+ apical systolic murmur.

Abdomen—Right half slightly distended, slightly tender in both lower quadrants. Firm "walnut-sized" masses palpable to left of umbilicus and in left hypochondrium.

Rectal — Relaxed sphincter. Left lobe of prostate and left seminal vesicle slightly enlarged. Black dry feces on examining glove.

Extremities—One-plus pitting edema of ankles.

Laboratory Findings:

Wasserman — Negative.

Hgb: — 7.6 and 9.0 grams.

RBC — 3,000,000 to 3,300,000.

WBC — 17,200 to 19,000; 89 Polys, 11 Lymphs.

Blood cultures — five — all sterile.

Total protein — 4.1, 4.0, 3.0.

Tuberculin — Negative 1-100,000, 1-10,000.

Gastric analysis — No free Hcl.

Widal — Two samples taken on ? same day — Negative H and O.

Para B — Negative.

Para A — Positive 1/320.

Feces — All positive for occult blood; not examined for parasites and ova.

3 cultures — Negative for typhoid-dysentery group.

B. Pyocyaneus grown once. Hemalytic coli grown twice, also intermediate colon bacilli.

Urine — Culture negative. Typhoid-dysentery concentrates 1013-1027.

occasional 1+ sugar and 1+ albumen,

occasional hyaline cast.

X-rays — Chest — "Areas of mottled dullness in apices of both lungs. Bronchial tree is accentuated. Findings consistent with tuberculosis infection probably of long duration — whether quiescent or not cannot be determined.

Another x-ray of chest about 2 weeks later showed nothing in apices as previously reported and an area in left apex having the appearance of a cavity with thick walls."

Two attempts to examine colon by barium enema were made from which examinations no definite conclusions could be drawn by x-ray department because patient was unable to retain barium.

Examination of stomach and duodenum showed no definite lesion.

E. K. G. — showed no evidence of intrinsic cardiac lesion.

Course: Patient was in hospital 23 days during which time his course was one of rapid failure. Temperature was septic in nature, spiking once and twice daily to 102° and 103°. Pulse ranged between 110-130. Respiration around 25. On 13th hospital day patient developed what was described as a phlebitis of left lower leg. He received two blood transfusions. A few days before his death he was described as "extremely cachectic." Death occurred on 23rd hospital day.

X-Ray Discussion

Dr. Batchelder: The chest films taken on the 16th of January show the mottling in the region of both apices which has been described, together with moderate accentuation of the lung markings on both sides. The heart shadow was not enlarged in particular reference to the history of rheumatic fever which he gives, and the sistolic murmur which is mentioned. Supracardiac angles are clear. No evidence of pleurisy in the history.

The second film of the chest taken two weeks later shows almost identical findings. There is a suggestion of a little thickening of the right side of diaphragm. The shadow at the apex is brought out a little plainer with the heavier exposure, but the shadow showed no change in two weeks' time. G. I. examinations were unsatisfactory. The stomach films were entirely normal. The colon examination was quite unsuccessful. There was evidence of barium in the lower intestine. A little stayed in the descending and lower sigmoid region. The contour in this section is smooth. There is a tendency to reasonably good postural indentation. Bar-

ium by mouth was followed part way in the small intestine. There is some in the region of the cecum, and later films shows that the head of the meal had come through the transverse colon. The cecum is a little wide.

I think that it is particularly interesting that this, (pointing to the x-ray film), does suggest colitis of a non-specific bacillary type in which one gets the parallel wide appearance. Not too many conclusions should be drawn from the attempted colon examination. I believe the tuberculosis is not active, but an old process.

Discussion of Case by Dr. Warren

The conditions which deserve mention in the discussion of this case are Spru, bowel malignancy, bacillary dysentery, amebic dysentery, ulcerative non-specific colitis and tuberculous enteritis.

The possibility of Sprue is discounted on the absence of the stomatitis which is said to be marked in this disease and on the information that the patient always lived and worked in Rhode Island. The question of bowel malignancy cannot be absolutely ruled out. However, 18 months of diarrhea is rather long for the usual bowel malignancy. The "walnut sized" masses described as having been palpated in the left half of the abdomen could, of course, be bowel malignancy; but there is a better explanation for these masses, especially in view of the x-ray findings in the bowel which were not suggestive of malignancy. The possibility of neoplastic disease of the bowel being present in addition to another primary disease remains.

The clinical picture is compatible with amebic dysentery. It may even be assumed that the "thick walled cavity" in the left lung apex might be a metastatic amebic abscess. A single stool specimen was sent to the laboratory for question of presence of amebae. This search was not carried out. Without any evidence at all of the presence of amebae in this man's stools this diagnosis cannot be made.

Bacillary dysentery is not so readily ruled out. The clinical picture is not incompatible. Typhoid and paratyphoid A and B do not cause such lengthy clinical picture. In addition the Widals were negative and no specific organisms were isolated from the stools and urine by repeated culture. The presence of the positive Para A agglutination in a dilution of 1/320 is significant, but in the face of the relatively high white count, relatively high pulse rate, absence of specific organisms in the urine and stools and no increase in the titre it must be assumed that the positive agglutination for Para A was the result of a previously acquired immunity either by inoculation or by having had the disease.

Bacillus Pyocyaneus and Hemolytic coli are organisms which may be present in diarrheas due to other causes. The single growth of B. Pyocyaneus and the recovery of Hemolytic coli on two occasions all thought to be not significant etiologically. Non-specific ulcerative colitis cannot be absolutely ruled out, but usually has a more characteristic x-ray picture and shows repeated remissions and exacerbations which are not recorded in this history.

The entire clinical picture is best explained by tuberculosis. It is reasonable to assume the presence of rather extensive pulmonary tuberculosis on the basis of the x-rays. The presence of the cavity, despite the denial of cough and sputum in the history, makes it probable that the process was active. Tuberculous enteritis is a very common complication of pulmonary tuberculosis, both when the pulmonary lesions are active or after the pulmonary lesions may have become quiescent. The disease most commonly attacks the ileocecal region and then spreads up and down the gut. The walnut sized masses described in the record can be tuberculosis mesenteric adenitis—but more likely these masses were the indurated tuberculous gut itself. The clinical picture is typical for tuberculous enteritis.

The single B. P. reading available is 100/60, and brings up the speculation of the tuberculous involvement of the adrenal glands, despite the absence of any other recorded evidence such as mucous membrane pigmentation and changes in blood chlorides. The negative tuberculin skin tests in dilutions of 1-100,000 and 1-10,000 does not, of course, rule out tuberculosis — but rather suggests, in this case, the presence of an overwhelming tuberculous infection. The three attacks of iritis during this man's childhood may also have been tuberculous — that being a common cause of repeated attacks of iritis. The manner of this man's death is not described in the record, so that the possibility of a pulmonary embolus secondary to the phlebitis he

had, cannot be completely ruled out; nor can the possibility of perforation of the gut be completely excluded.

I believe the autopsy will show (1) Pulmonary tuberculosis with at least one cavity

(2) Tuberculous enteritis

(3) Phlebitis of left lower leg

Possible findings

(1) Tuberculosis of adrenals

(2) Minimal mitral rheumatic disease.

Dr. Clarke: Any discussions of Dr. Warren's case?

Dr. Batchelder: I do not like to be too negative in my discussion of this case. I think the little evidence we have in the cecum is somewhat against tuberculosis. With tuberculosis, one would expect the cecum to be irritable, and would not contain barium to the extent that is present. If irritability was due to infection, there would be so much irritability, that the cecum would not be filled at all, or certainly so that we would not get a satisfactory film of it.

Dr. Harrington: To my mind tuberculous enteritis is not as clear as something of a metastatic nature. There is little suggestion in cases which are not far advanced. Very seldom do we find tuberculous enteritis with pulmonary lesions which is not productive of large amounts of sputum. The picture of tuberculous enteritis is frequently associated with hypermotility. G. I. exams do not bear this out. It is my impression that the patient might have had a malignancy of the stomach with metastases to the peritoneum, and abdominal wall.

Dr. Cook: No record of proctoscopy?

Dr. Warren: No, proctoscopy was not done.

Dr. Harrington: Might I ask if there was any possibility of granuloma in the region of the ileum, or any section of the ileum?

Dr. Batchelder: It is doubtful. Another film which I did not put up does show a collection of shadows in the terminal ileum and cecum. It is not a satisfactory examination, but it does show a normal diameter and position, and I can fairly rule that out.

Dr. B. Earl Clarke: Postmortem examination of the exterior of the body showed a bed sore on the right hip, which might have been a portal of infection. The right leg was swollen. The left iliac vein was found to be thrombosed.

There was fluid in each pleural cavity — 600 c.c. on the right and 350 c.c. on the left. I assume the negative x-rays were taken early in the course of the disease before this fluid was present. There was chronic passive congestion of the liver and spleen. In the apex of the right lung was a cavity with a dense fibrous wall. Microscopic sections of this wall show tuberculosis. There was a terminal broncho-pneumonia and a hemolytic streptococcus was cultured from the heart's blood.

When the abdomen was opened there was found to be a mass of adhesions in the left side of the pelvis. These bound the rectum, sigmoid colon and bladder together and to the parietal wall. There was found to be a carcinoma of the sigmoid with perforation and much inflammatory reaction in the adjacent tissues.

Pathologic diagnosis:

Adenocarcinoma of the colon.

Terminal septicemia and broncho-pneumonia.

Pulmonary tuberculosis (old).

COMING MEETINGS

The following is the program for the meeting of the Rhode Island Society of Pathologists at the Memorial Hospital, Pawtucket, R. I. on June 19, 1942 at 8:30 P. M.

(1) How A Tumor Clinic Should Function
John F. Kenney, M.D. Chief,
Medical Division

(2) Indications for Treatment With Radium
G. Raymond Fox, M.D. Chief,
Radium Division

(3) Indications for Treatment With X-Ray Therapy
Emanuel W. Benjamin, M.D., Radiologist

(4) Demonstration of Photographs from the Photograph Department, and Pathological Slides from the Pathological Department

Very truly yours,
Louis Goodman, M.D., *Secretary*

INTERNATIONAL COLLEGE OF SURGEONS NATIONAL ASSEMBLY

July 15, 16, 17, and 18, 1942
Headquarters and Meeting Place — Shirley-Savoy Hotel

The United States Assembly of the International College of Surgeons meets in a four-day session in Denver, Colorado, July 15-18. Headquarters and main assembly will be at the Shirley-Savoy Hotel.

THE FIFTEENTH GRADUATE FORTNIGHT

of the New York Academy of Medicine
October 12 to 23, 1942
Subject: "Disorders of the Nervous System"

THE AMERICAN CONGRESS OF PHYSICAL THERAPY

Will hold its twenty-first annual scientific and clinical session September 9, 10, 11 and 12, 1942 inclusive, at the Hotel William Penn, Pittsburgh, Pa.

PROVIDENCE MEDICAL ASSOCIATION

A regular meeting of the Providence Medical Association was held on Monday, May 4, 1942.

The President reported the receipt of a communication from Dr. William P. Davis announcing his resignation as treasurer of the Association in view of the fact that he had been called to active service in the Navy, and stated that he would appoint a successor in the immediate future in accordance with the rules of the By-Laws of the Association.

The Executive Secretary reported for the Executive Committee as follows:

That suggested standing orders for use by nurses in an emergency until physicians orders can be secured were approved upon recommendation from the Association's medical advisory committee to the Providence District Nursing Association.

That in view of the fact that the June meeting of the Association falls annually within the period designated for the annual meeting of the Rhode Island Medical Society, it was recommended that the By-Laws of the Providence Medical Association be amended to remove the requirement for a June meeting of the membership. In keeping with this recommendation the Executive Committee would amend Section 1 of Article V of the By-Laws to read as follows:

"This Association shall convene on the first Monday evening in each month, from October to May, inclusive, at such hour and place as it may determine. Every alteration of the time and place of meeting shall be made by the Association at least one month before the change shall take effect."

That the executive committee moved that the full cooperation of the Providence Medical Association be extended to Dr. Guy W. Wells and the Procurement and Assignment Committee of the State in their task of recruiting medical personnel for military and civilian needs.

Dr. Jesse E. Mowry moved the acceptance of the change in By-Laws as regards Section 1 of Article

V as submitted by the Executive Committee. The motion was unanimously approved.

The President reported that the entertainment committee had planned the annual golf tournament and dinner to be held on Wednesday, May 27, and he urged support of this phase of the Association's activities.

Dr. James P. McCaffrey of Providence was elected to membership.

The first presentation was by Dr. Clarence E. Bird who discussed "Carcinoma of the Larynx" and presented a detailed account of his experiences with five such patients at the Rhode Island Hospital during the past three years. Two of these patients were presented on the platform. Dr. Bird stated that surgery is the treatment of choice in group I and II cases — radiation therapy in group III.

Dr. Frank E. Adair, associate professor, Clinical Surgery, Cornell Medical College, and attending surgeon at Memorial Hospital, New York City, presented the second paper, titled "CANCER OF THE BREAST". He stated that surgery alone indicated when there was no axillary involvement. When axillary metastisis is present radical operation plus post-operative x-ray therapy is the treatment of choice.

This paper was discussed by Dr. Herman C. Pitts, Dr. Peter P. Chase, Dr. Isaac Gerber, Dr. Edward S. Cameron, and Dr. Anthony Corvese.

The scientific program was concluded with the showing of the film Enemy X, prepared by the American Society for the Control of Cancer and the National Cancer Institute. The film was discussed briefly by Dr. Herman C. Pitts.

The meeting adjourned at 10:45 P. M.
Attendance: 105

BOOK REVIEW

SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY FOR STUDENTS AND PRACTITIONERS OF MEDICINE, by F. R. Davison. 2nd Edition. C. V. Mosby Co., St. Louis, 1942.

This book of 695 pages in pocket size is a convenient and concise reference text on the subjects listed in its title. Drugs have been arbitrarily divided into those acting on skin and mucosal surfaces, central nervous system, peripheral nervous system, muscle and kidney, while other chapters cover metals, biologicals, miscellaneous drugs and the sulfonamids. Each drug, some of which come under more than one chapter, is considered as to its pharmacology, pozology, value as therapy, indications and contraindications. Representative prescriptions are given in many cases. Charts and graphs of the action of drugs and many structural chemical formulas are given. The chapter on sulfonamides is quite up to date; more so than any other text that is available.

This book should be valuable for the practitioners as a desk guide to therapy with accepted drugs.

RUSSEL O. BOWMAN, PH.D.

TRY PABLUM ON YOUR VACATION

Vacations are too often a vacation from protective foods. For optimum benefits a vacation should furnish optimum nutrition as well as relaxation, yet actually this is the time when many persons go on a spree of refined carbohydrates. Pablum is a food that "goes good" on camping trips and at the same time supplies an abundance of calcium, phosphorus, iron, and vitamins B and G. It can be prepared in a minute, *without cooking,* as a breakfast dish or used as a flour to increase the mineral and vitamin values of staple recipes. Packed dry, Pablum is light to carry, requires no refrigeration. Easy-to-fix Pablum recipes and samples are available to physicians who request them from Mead Johnson & Company, Evansville, Indiana.